

SASKATCHEWAN DISEASE CONTROL LABORATORY NEWSLETTER

(Formerly The Provincial Laboratory), 3211 Albert Street, Regina, SK S4S 5W6 (306) 787-3131

NEWS FROM THE SASKATCHEWAN DISEASE CONTROL LABORATORY

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Attachments

- ◆ 2005/06/07 Human Viral Infections
- ◆ Compendium Updates
- ◆ STAT Needle Stick Protocol

Highlights of Spring 2007 Newsletter

- A new platform used for quantitative viral load in both HIV and Hepatitis C has been introduced. See page two for details.
- The SDCL has introduced a new typing system for invasive *Streptococcus pneumoniae*. This allows serotyping of over 80% of isolates and facilitates tracking the serotype 5 outbreak in the province. See page three for more details.
- When screening for enterovirus, a new virus, human parechovirus is now being identified and reported out. See page four for more details.

- The Virology Section has added a DFA test for human metapneumovirus to the respiratory screen. See page five for more information on this newly identified pathogen.
- The SDCL has set new reference ranges for Vitamin D3 measurement. See page six for the Vitamin D3 story.
- For an update on diagnosis of Lyme Disease see page seven.



FAQs on HBV/HCV Positive Needle Stick Serology Testing Protocol Follow-up:

1. Hepatitis B core IgG (HBc IgG) can identify a window when antigen has disappeared and before antibody to surface antigen has appeared. When is HBc total IgG/IgM done?

Response:

- i) Hepatitis B core IgG/IgM is routinely done on transplant donors.
- ii) Hepatitis B core IgG is routinely done on needle stick source patients.

- iii) Occasionally public health will order HBc IgG in patients with hepatitis B surface antibody to determine whether the patient was vaccinated or had natural infection. All hepatitis B infected patients develop core antibody. The vaccine does not induce core antibody, thus core antibody-negative, surface antibody-positive results are consistent with vaccinated patients.



HIV & HEPATITIS C VIRAL LOAD TESTING



Samples for HIV and Hep C viral load can now be shipped at 2-8°C.

HIV & Hepatitis C Viral Load Testing:

The SDCL has recently moved both HIV and HCV viral load testing to a new platform. The new method is a real-time nucleic acid test (NAT), and will replace both the HCV Cobas Amplicor Monitor and the HIV Nuclisens NASBA assays.

In the new HIV viral load assay, the dynamic range for HIV will be 40-10,000,000 copies/mL.

HIV results will be reported in three formats: (i) HIV RNA not detected; (ii) HIV < 40 copies/mL - RNA detected below reproducible limit of quantification for this assay; (iii) HIV RNA detected, (*numerical value*) copies per mL.

In the new HIV assay the HIV polymerase target is more stable than the traditional gag (used in previous assay), allowing better quantification of divergent subtypes.

The new dynamic range for HCV is 12 to 100,000,000 IU/mL. This assay has excellent low range sensitivity.

HCV PCR qualitative testing has been replaced by the new quantitative assay. This will be performed by request on antibody-positive patients in order to detect active disease. The report of positive or negative will be replaced with one of the following: (1) HCV RNA not detected; (2) HCV <12 IU/mL - RNA detected below reproducible limit of quantification for this assay; or (3) HCV RNA detected, followed by a numeric value in IU/mL.

The positive results will now come with a numeric value. The result is used only to identify a patient with active disease and you need to apply the same criteria used previously for determining the need for referral and/or antiviral therapy.

With the change in methodology, it is no longer necessary to send specimens frozen. The sample must be collected (ACD-A or EDTA), centrifuged and separated from cells within six hours of collection. The sample must arrive at SDCL on ice pack within 72 hours of collection. The sample is to be maintained at 2-8°C at all times or frozen until shipped.

HEPATITIS B PCR TESTING

Hepatitis B PCR testing

HBV DNA PCR testing is NOT recommended for patients positive for Hepatitis B surface antigen (HBsAg). The two tests provide the same interpretive information on the patient's HBV status, and both indicate acute phase infection.

When the HBsAg test on a patient is negative and evidence of a high-risk exposure is known, either past or present, or the patient has come from an area of the world known to be endemic for HBV, then the HBcore total antibody (IgG/IgM) test is recommended. If HBcore total antibody is present, then HBcore IgM, HBeAg and HBeAb will be added to the test profile.

The HBV qualitative DNA PCR is only ordered to exclude core and pre-core mutants in HbsAg-negative, high-risk patients.

The new Taqman HBV DNA viral load dynamic range is 6-100,000,000 copies/mL and is reported in IU/mL.

The conversion factor for IU/mL to copies per mL is 5.82. Therefore the sensitivity of the current test is 6 IU/mL x 5.82 = 34.9 copies/mL.

The latest Canadian Management of Chronic Hepatitis B Consensus Guidelines recommend the use of hepatitis B viral load testing in conjunction with serology and ALT tests, to determine the potential need for treatment. Recommendations for hepatitis B viral load assay include: when ALT is elevated in patients who are HBeAg-positive, treatment should be considered if the viral load is greater than 20,000 IU/mL. When ALT is elevated in HBeAg-negative patients, treatment should be considered if viral load is greater than 2000 IU/mL. Note that patients with significant inflammation or fibrosis on biopsy should be treated regardless of viral load or ALT result.



IPD

Serotype Distribution Invasive Pneumococci Jan. 2005 - Mar. 2006

Serotype	Number of Isolates
5	46
14	38
4	25
6B	23
3	17
22F	14
8	13
18C	13
19F	12
23F	12
9V	12
19A	10

Invasive Pneumococcal Disease

In response to an increase in invasive pneumococcal disease (IPD) caused by *Streptococcus pneumoniae* serotype 5, SDCL has validated and introduced a molecular serotyping method for common serotypes of *S. pneumoniae*. Previously, IPD isolates of *S. pneumoniae* were referred for serotyping to the National Centre for Streptococcus. However, the turnaround time when cultures were referred out was several months. The new method, which was introduced in March 2007, will allow the SDCL to serotype over 80% of *S. pneumoniae* isolates within 10 working days of isolation or receipt of a culture.

From January 2005 through March 2007, 298 isolates were recovered from IPD, representing 36 serotypes. The 12 most frequently isolated serotypes accounted for 235 isolates (79% of total). The remaining 63 isolates fell into 24

different serotypes, each represented by a handful of isolates.

The procedure implemented by SDCL will allow rapid identification of 17 serotypes. Isolates that cannot be serotyped will continue to be referred to the NCS. The serotype distribution will be reviewed annually to ensure that the most common serotypes are always covered by the method now in use.

Recent studies suggest the serotypes of *S. pneumoniae* not included in the 7-valent vaccine may be emerging as a cause of invasive disease (RJ Singleton *et al.*, JAMA 2007; 297:1784-1792). Rapid serotyping at the SDCL will allow early detection of emerging serotypes, such as serotype 5, which has been isolated in Saskatchewan only since 2003.

HPV TESTING



HPV Testing

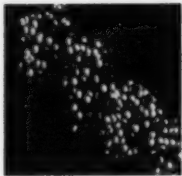
The SDCL offers HPV testing of cervical samples. Submit cervical sample in viral transport media. The Canadian guidelines recommend HPV testing for women over age of 30 with cervical cytology reported as "a typical squamous cells of undetermined significance" (ASCUS). Patients with ASCUS and HPV negative can be followed with routine Pap test. HPV positive

should be considered for referral for colposcopy. Approximately 1% of all Pap tests come back ASCUS.

The recent approval of a vaccine for human papillomavirus (HPV) has led to requests for antibody testing. Serology testing is not indicated prior to immunization.



Nucleic Acid Amplification Testing for STIs



"Think before you test."

Nucleic Acid Amplification Testing for STIs

Laboratory diagnostic testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* has undergone significant changes in recent years. The standard methods are now nucleic acid amplification tests (NAAT or NAT). In Saskatchewan these have been in use for several years, initially using the polymerase chain reaction (PCR) format, but more recently using the strand displacement assay.

These assays have several advantages over conventional methods. They have much greater analytical sensitivity, which has allowed the use of urine as a diagnostic sample for both chlamydia and gonorrhea. The adoption of a non-invasive specimen such as urine has also facilitated more widespread testing of the population. Secondly, because they detect nucleic acids, and not viable organisms, specimen transport has become less of a concern, particularly from remote locations.

There are some drawbacks to the use of NAAT. Positive results can be detected for several weeks after successful treatment, so a test of cure is not recommended except for pregnant patients.

When sexual assault victims are examined, for medico-legal purposes, swabs can be collected for either culture or NAAT. If NAAT specimens are submitted, the results will not be accepted as definitive in legal cases, unless repeat positive by a second NAT. In such cases, it is necessary to notify the lab to do the second NAAT.

It is important to remember that the predictive value of a positive result decreases as the prevalence of a disease declines. Therefore screening of low risk individuals without any likelihood of disease will lead to false-positive results. Think before you test!

HUMAN PARECHOVIRUS

"Parechovirus will appear this summer as the weather warms up"

Human Parechovirus Infections in Saskatchewan

Picornaviruses constitute a diverse family of single stranded RNA viruses. Within the Picornaviridae family, 5 genera are known to cause infections in humans: Enterovirus, Hepatovirus, Rhinovirus, Kobuvirus and Parechovirus. The parechovirus genus contains 3 human pathogens parechovirus type 1, 2 and 3.

These viruses are identified in specimens typically sent to rule out enterovirus. If the enterovirus screening DFA is positive, the specimen is sent to the reference laboratory for typing.

Parechovirus is associated with diseases similar to those caused by human enterovirus (gastroenteritis, respiratory diseases, aseptic meningitis, encephalitis and neonatal sepsis-like syndrome).

This virus was identified in Saskatchewan during the last enterovirus season.

Parechovirus will appear this summer as the weather warms up, from specimens submitted typically for enterovirus.

METAPNEUMOVIRUS

Metapneumovirus

Human metapneumovirus (MPV) is a respiratory viral pathogen that causes a spectrum of illnesses, ranging from asymptomatic infection to severe bronchiolitis. In 2001, van den Hoogen et al described the identification of this new human viral pathogen from respiratory samples submitted for culture during the winter season. Half of the initial 28 MPV isolates were cultured from patients younger than 1-year, and 96% were isolated from children younger than 6-years. Seroprevalence studies revealed that 25% of all children aged 6-12 months who were tested in the Netherlands had detectable antibodies to MPV; by age 5-years, 100% of patients showed evidence of past infection. A separate report from Australia describing three additional cases of MPV infection

supports the contention that this newly discovered virus is ubiquitous and additional information relating to parthenogenesis and epidemiology is likely to emerge in the coming years.

Little is yet known about the pathophysiology of MPV infection, but similar to the related pneumovirus, human respiratory syncytial virus (RSV), MPV appears to have a tropism for the respiratory epithelium. The patient may be asymptomatic or symptoms may range from mild upper respiratory tract complaints to severe bronchiolitis and pneumonia. Experts in the field of pneumovirus infections agree that the pathophysiology of MPV likely parallels that of the RSV infection, including the absence of viremia.

The table below summarizes current information for MPV.

Trait	Description
Seasonality	Winter and spring
Distribution	Worldwide pathogen
Age Groups	<ul style="list-style-type: none"> • < 5 years • immunocompromised adults • immunosuppressed (i.e., transplant)
Symptoms	Mild to severe acute infection
Severity	<ul style="list-style-type: none"> • fever • severe cough • bronchiolitis • pneumonia • requiring ventilator support • extracorporeal membrane oxygenation
Prevalence	3 to 5%
Serological Evidence	Four known major genetic lineages for MPV
Co-infections	MPV and other respiratory viruses

REMINDER - SYPHILIS/ RUBELLA/ PRENATAL REQUISITION

Reminder to all Clients regarding Syphilis/Rubella/Prenatal Requisition

Please use the new Syphilis/ Rubella/Prenatal Requisition (Health 13-2 11/06). This new requisition includes HCV as part of the prenatal panel. When filling out the requisition please remember to

check off the appropriate "Tests Requested" box. Testing will only be performed as indicated by client selection. For statistical purposes include the expected date of delivery.



VITAMIN D3 MEASUREMENTS IN SASKATCHEWAN

*"New Reference
ranges"*



Vitamin D3 measurements in Saskatchewan

Vitamin D is essential for the efficient utilization of dietary calcium. In a vitamin D-deficient state, the amount of calcium absorbed is inadequate to satisfy the body's calcium requirement, resulting in increase in the production and secretion of parathyroid hormone (PTH). In addition to compromising bone health, vitamin D insufficiency may also have adverse effects on the immune system and may increase the risk of certain chronic diseases.

Because of the latitude of Saskatchewan and the climate, residents of this province may not be getting sufficient solar exposure to meet their vitamin D requirements during the winter months, and may be in need of vitamin D supplementation.

A number of physicians have been in contact with us, expressing their concern about the likelihood that many children and adults in Saskatchewan may be vitamin D deficient. Our reference ranges for 25-OH vitamin D3 have been as follows:

Old Reference Ranges:

deficient: <25 nmol/L
relative insufficient range: 25-40 nmol/L
normal: > 40 nmol/L

Prior to 2005, samples for 25-OH vitamin D3 measurement sent to the SDCL were referred out of the province to Hospitals in Common. The method (immunoassay) used measured all forms of vitamin D3 (which included both vitamin D2 + vitamin D3).

Since 2005 vitamin D3 has been measured at the SDCL by a more specific and precise method using tandem mass spectrometry.

Reference ranges for vitamin D3, as for most analytes, are normally established by measuring the levels in a normal population. There is a growing consensus that vitamin D insufficiency is much more common than previously thought. A number of articles have appeared in the literature, which

suggested that our previous reference ranges might not reflect optimal levels, and that higher levels of vitamin D3 maybe required to optimize parathyroid hormone levels and calcium absorption.

In April of 2007 new reference ranges for vitamin D3 were introduced. These new ranges reflect the latest information in the clinical and scientific literature, and are consistent with the recommendations of endocrinologists in Saskatchewan. These new reference ranges are as follows:

New Reference Ranges:

deficient: <25 nmol/L
relative insufficient range: 25-70 nmol/L
optimal range: 70 - 250 nmol/L
toxic range: > 250 nmol/L

The results being reported by SDCL are for total 25 OH vitamin D, which is the sum of vitamins D2 and D3. In the majority of patients who are tested for vitamin D3, vitamin D2 constitutes a small fraction.

The concept of the optimal range has been introduced to reflect the opinion of many authorities who believe that not only the elderly population, but also children, young adults, and middle-aged adults are at high risk of vitamin D deficiency.

A sample exchange program with the Mayo Clinic, showed excellent correlation in terms of precision and accuracy. The new reference ranges, and the introduction of an optimum range for vitamin D3 has also been adopted at the Mayo, and other lab facilities involved with the measurement and monitoring of vitamin D.

Note: The requirements for the measurement of 1,25-diOH vitamin D3 have not changed. This test still requires approval from a biochemist at SDCL, and it is approved according to criteria outlined in a previous communication from our lab. The test is sent out of province for analysis.

Any questions about
vitamin D testing should
be addressed to either:

Jeff Eichhorst
Lab Manager
SDCL 306-787-3284
or

Dr. Denis Lehotay
Biochemistry Consultant
SDCL 306-787-7900

LYME DISEASE

"SDCL performs an ELISA for antibodies to B. burgdorferi. Any specimens that are screen positive are referred to the National Microbiology Laboratory for Western Blot testing."

Lyme Disease Testing

Lyme borreliosis (Lyme disease) is not common in Canada. In Saskatchewan, only imported cases, with a history of tick bite during travel to endemic areas, have been detected. The diagnosis of Lyme disease can be made clinically, in conjunction with laboratory test results. Available serological tests have limitations to their specificity, so screening of patients with non-specific subjective symptoms is strongly discouraged (1). The Canadian Public Health Laboratory Network has recently produced guidelines for laboratory diagnosis of Lyme borreliosis (2). The main points of these guidelines are:

1. The appearance of a typical EM rash occurring in season and with a history of exposure to ticks should be considered an indication for antibiotic treatment, irrespective of the results of serological testing.
2. An EM-like rash occurring out of season and/or after exposition in a Lyme nonendemic area where ticks are not known to be established should be investigated with antibody testing.
 - a) Initial negative serological tests in patients with skin lesions suggestive of EM should have testing repeated after four weeks.
3. Patients with symptoms and signs suggestive of early disseminated or late Lyme disease should be tested for antibodies to *B. burgdorferi*.
 - a) Initial testing should include an EIA commercially available and approved for use in Canada.
 - b) Sera that are positive or indeterminate by an EIA should be subjected to Western blot confirmatory testing.
 - c) Sera that are screened negative for antibodies using an EIA should not be subjected to Western blot testing.
4. Patients without objective findings suggestive of *B. burgdorferi* infection should not be 'screened' for *B. burgdorferi* antibodies.

- a) The diagnosis of Lyme borreliosis should not be based on positive serological tests in the absence of objective findings of infection and a credible epidemiological link to infected ticks.
 - b) Bypass of laboratories that apply the two-step testing procedure (initial EIA followed by Western blot testing) is strongly discouraged.
 - c) Patients should be made aware that antibody testing is subject to false-positive results, and that positive test in the absence of objective findings and credible exposure histories usually represent false-positive results.
5. The role of antibody testing to monitor the results of therapy has not been established and is therefore not recommended.
 6. The role of the microbiology laboratory in the assessment of patients with the persistence of symptoms following antibiotic treatment has not yet been established.
 7. Testing patients suspected of Lyme disease for other tick-associated diseases should not be routinely performed; instead, testing should be based on risk exposure and clinical symptoms.

References:

1. Nichol et al. Ann Intern Med 1998; 128:37-48
2. Canadian Public Health Laboratory Network. Can J Infect Dis Med Microbiol 2007; 18:145-148.



MICROBIOLOGY SPECIMEN LABELLING

Microbiology Specimen Labelling

Many specimens for bacteriology are received with inadequate labelling. In order for SDCL to perform the appropriate tests, the requisition must indicate clearly the specimen and the test required. Examples of specimens that are frequently mislabelled include endocervical swabs that are labelled vaginal swabs (and vice versa) and urethral swabs that are labelled as penile swabs. In these examples,

cultures for *Neisseria gonorrhoeae* are performed only on endocervical or urethral swabs, not on vaginal or penile swabs.

Another important detail that is often overlooked is the anatomical site of a wound or skin lesion. Without this information, appropriate laboratory tests may not be performed.

COMPLETION OF REQUISITIONS

"A correct address facilitates timely reporting to public health"

Complete Requisitions Fully

If the patient's current address is different from that in the Provincial Health Registry, it must be written clearly on the requisition.

If this is not done, MHO reportable results may not be sent to the public health unit in the correct Health

Region, causing confusion and unnecessary delay in public health follow-up.

It is the responsibility of the health-care provider to ensure that the correct address is provided. A correct address facilitates timely reporting to public health.

FAX NUMBER VALIDATION

Fax Number Validation

SDCL has been validating fax numbers for 'copy to recipients' that are listed on submitted requisitions. As of June 18, 2007 SDCL will place the following comment on reports where the copy to recipient's fax number has not been previously validated, "COPY REQUESTED TO ['PROVIDER NAME'] NOT FAXED, FAX NUMBER NOT VALIDATED. TO VALIDATE FAX NUMBER CALL (306) 787-3130."

When SDCL receives a phone call to validate a fax number, a fax validation form will be faxed to the client who will fill in the required information and return the form by fax. This fax number and other information supplied will be stored in our fax database. If a copy of the report is still required the 'copy to recipient' will have to phone (306) 787-3131 to request a copy.

COMPENDIUM UPDATES

Attached are four pages to be replaced in your copy of the "Provincial Laboratory Compendium of Tests". The pages are: Referrals - pages, 18, 32, 36, and 37.

TOTE CLEANING

Tote Cleaning

In an effort to improve efficiency and client service, Saskatchewan Disease Control Laboratory, (SDCL), has introduced several clinical specimen transporters (totes) to clients within each Regional Health Authority.

In order to adhere to standard safety precautions and help extend the life of the SDCL's totes, including the Sterilite or Rubbermaid secondary containers, we wish to standardize the way the totes are decontaminated and disinfected. However, because of the increasing numbers of totes received at SDCL and because of our space issues, we are asking all clients to clean the inner surfaces of their totes and secondary containers that are exposed to biological specimens, on a weekly basis and in between as necessary.

We recommend using a dilution of **1% to 2% Sodium Hypochlorite** (bleach) and water solution, followed by a wipe down with water. The second option is to use a cleaning product called 'Virkon', which can be purchased through the vendor called 'Source', catalogue number VET353001.

If you require any further information or clarification, please contact Cindy Schmidt, Client Outreach Co-ordinator at 306-787-7028 or Darlene Miller, Section Manager of our Specimen Management Centre at 306-787-3238.

REMINDERS

Client Reminders

HIV:

For HIV sample submissions, SDCL's preference is for clients to provide patient's full name and public health number but option still exists for clients to use codes for those patients wishing to remain anonymous.

"Copy To" Requests:

When requesting a copy to be sent to another health care provider, please provide a correctly spelled physician/health care provider name, address and/or valid fax number on all requisitions, (phone numbers have inadvertently been provided by some clients for fax requests).

Physician Billing Numbers:

To ensure correct ordering physician identity, please include physician's billing number on all requisitions.

For physicians with the same last name and with only one initial provided, the billing number is used to validate that the correct physician receives the lab report.

Transfer Tests:

Please use **appropriate requisitions** and send **separate specimens** for all Regina Qu'Appelle Health Region and Canadian Blood Services transfer specimens.

Specimens for Mycobacterial Culture:

Please ensure TB specimens are individually enclosed within a sealed biohazard bag, with the requisition form in the pouch outside the specimen compartment. Do NOT put unbagged specimens directly into the tote or shipping container.



CONTACTS NUMBERS



Which
Phone
Number?

**REMEMBER
CALL
787-3131
for
information
from the
SDCL**

PAPER REQUESTS

**Information from the Saskatchewan Disease Control Laboratory (SDCL)
(Formerly The Provincial Laboratory).**

787-3131

Hours of Operation:

8:00 a.m. to 5:00 p.m. Mon. to Fri.

7:30 a.m. to 4:00 p.m. Saturday

Evening & Weekend call back, see #6 for cell numbers.

Press 1: Medical Results/General Inquiries

Identify who you are, institution and whether you are calling for:

- lab results, in "Circle of Care" can be provided verbally;
- specimen receipt and/or status;
- STAT testing, call will be transferred to the appropriate section;
- requests for technical information, call will be transferred to appropriate section.

Press 2: Referral Desk

For information on tests referred out-of-province.

Press 3: Maternal Serum Screening

For results

Press 4: Water Samples

For results on water samples submitted.

Press 5: Shipping and Supplies

For example, requests for transport media such as SAF for parasitology specimens, Carey Blair or viral transport media for specimens submitted to the Saskatchewan Disease Control Laboratory.

Press 6: Emergency After Hours Service (Evenings & Weekends Only)

TOXICOLOGY/CHEMISTRY	536-4653
NEEDLE STICK EXPOSURE/ORGAN DONORS	537-0639
MOLECULAR DIAGNOSTICS - ORGAN DONORS	537-9416
MEDICAL DIRECTOR	536-7658 Dr. G. Horsman
ASSISTANT CLINICAL DIRECTOR	537-4285 Dr. P. Levett
CHEMISTRY, SCREENING & REFERENCE TESTING	533-6532 Dr. D. Lehotay
ENVIRONMENTAL SERVICES	535-7388 Dr. P. Bailey

VACCINES - PHONE YOUR REGIONAL PUBLIC HEALTH OFFICE

Press 9: Repeat Menu

Press 0: To speak with an attendant.

Paper Requests:

- Laboratory does not accept verbal test requests and requires you to fax in a request/requisition for any additional testing.
- If patient cannot be identified, as in "circle of care" then we require a "signed release of medical information form" faxed to us at 787-9122.

**REMEMBER Call 787-3131 for information from
the Saskatchewan Disease Control Laboratory.**

Laboratory Evidence of Human Viral Infections- # of Positive Findings 2005 - 2006

Date	Adenovirus	Astro/Calicivirus	Coxsackie virus	CMV	EBV	Echovirus	Enterovirus NT	HAV	HBV	HCV	HIV-1	HSV-1	HSV-2	Influenza A	Influenza B	Measles	Molluscum contagiosum	Mumps	Norovirus	Parainfluenza	Parvovirus	RSV	Rotavirus	Rubella	Varicella zoster
Jan. 2005	26			7	15	1	2		7	58	10	33	12	172	3			2	86	4	42	53	3		8
Feb	26			5	13		1		6	42	5	19	9	195	3				53	3	52	173	21		8
Mar	17			4	12		2	2	3	48	13	31	9	59	17				16	21	54	202	76		11
Apr	73			4	11		3	1	13	69	8	11	19	5	11	1	1		9	41	51	42	55		7
May	52			3	11		1	1	5	60	6	27	7		2				5	56	37	4	62		9
June	38			4	18		2		5	57	10	24	14					1		23	34	3	14		10
July	33			1	23	1	1	1	8	50	7	27	15		1				2	5	14				6
Aug	18		1	5	18	23	11		12	61	16	17	4					1		3	8				6
Sept	44			8	19	8	6	1	7	64	10	17	13	8					2		11		2		14
Oct	38		4		6	2		1	8	66	11	25	15	5		1		2	23	6	5		1		10
Nov	20		2	2	9	1	5		4	65	1	14	15			1			16	34			4		9
Dec	8		2	4	10		4		5	52	10	17	7						14	41	2		3		10
Jan-06	24		1	5	14		3		9	66	6	17	16	16	28				15	39	1	4	7		6
Feb	16			5	7		1		2	64	12	8	9	126	115	2		1	10	22	1	5	27	1	6
Mar	26			4	8		3	1	7	56	20	27	16	101	74				8	8	1	43	82	1	10
Apr	22			1	7		3	1	9	68	7	26	10	41	16			2	10	7	3	95	86	2	4
May	25			1	11		1	2	7	75	13	12	11	2					23	5		50	59		7
June	17			1	12		10		8	56	4	17	17	3					38	1	2	26	12	1	11
July	9		2	2	13	1	36	1	3	57	9	10	14						43	8	1	8	1	1	8
Aug	5		1	5	14	1	20		8	70	16	21	15			2			17	10		3	1		
Sept	8			4	11		7		1	55	13	15	5			2			52	12	2		1		7
Oct	9			3	8		15		9	56	16	21	5			3		1	90	24		6		2	9
Nov	10			2	10		9		13	98	18	9	12			3		1	217	26	4	35			7
Dec	18			1	7		2		3	54	15	14	7	7		1			158	7	3	75		1	8
Totals	582	0	13	81	287	38	148	12	162	1467	256	459	276	740	270	16	1	11	907	406	328	827	517	9	191

Laboratory Evidence of Human Viral Infections- # of Positive Findings 2007

Date	Adenovirus	Astro/Calicivirus	Coxsackie virus	CMV	EBV	Echovirus	Enterovirus NT	HAV	HBV	HCV	HIV-1	HSV-1	HSV-2	Influenza A	Influenza B	MPV	Measles	Molluscum contagiosum	Mumps	Norovirus	Parainfluenza	Parvovirus	RSV	Rotavirus	Rubella	Varicella zoster
Jan-07	13			1	6		3	1	15	71	17	15	7	66						210	15	2	113	10		5
Feb	4			1	9				3	62	6	3	5	48			1			110	1	1	55	32		3
Mar	12				12		2	1	5	54	14	17	10	52						101	7	5	36	138		8
Apr	13				12			1	6	64	12	13	8	12	2				1	43	5	2	6	92		5
May																										
June																										
July																										
Aug																										
Sept																										
Oct																										
Nov																										
Dec																										
Totals	42	0	0	2	39	0	5	3	29	251	49	48	30	178	2		1	0	1	464	28	10	210	272	0	21



Referrals

Section	Referral
Test	Chromogranin A (R)
Specimen	1 mL serum or 1 mL plasma (EDTA, Sodium Heparin, Lithium Heparin)
Collection	Collect blood in a plain red-top tube. Centrifuge, separate from the cells, aliquot serum into plastic vial and freeze. Collect blood in a trace element vacutainer. Centrifuge, separate from the cells, aliquot plasma into plastic vial and freeze.
Requisition #	Referral Test Requisition
Special Handling Instructions	
Shipping	Send frozen. Referred to Nichols Institute, California.
Reference Values	Detailed on Report
Turnaround Time	3 weeks

Section	Referral
Test	C-Neutrophil Cytoplasmic Antibody (R) (C-ANCA)
Specimen	2 mL serum
Collection	Use serum separator vacutainer (SST). Centrifuge. Aliquot required amount of serum into 12 x 75 mm plastic tube as soon as possible.
Requisition #	Referral Test Requisition
Special Handling Instructions	The testing is now being done as a screen, and when the screen is positive, then the separate "C" or "P" ANCA testing will be performed. Otherwise, only the ANCA screen will be done.
Shipping	Referred to Saskatoon.
Reference Values	Detailed on Report
Turnaround Time	1 week



Referrals

<i>Section</i>	Referral
<i>Test</i>	NTBNP (R) (BNP, N-Terminal Pro Brain Natriuretic
<i>Specimen</i>	1 mL serum *Serum is the specimen of choice*
<i>Collection</i>	Use serum separator vacutainer (SST). Centrifuge. Aliquot required amount of serum into 12 x 75 mm plastic tube as soon as possible. Keep cool.
<i>Requisition #</i>	Referral Test Requisition
<i>Special Handling Instructions</i>	
<i>Shipping</i>	Referred to Hospitals in Common Laboratory, Toronto.
<i>Reference Values</i>	Detailed on Report
<i>Turnaround Time</i>	

<i>Section</i>	Referral
<i>Test</i>	Organic Acid (R)
<i>Specimen</i>	10 mL of random urine
<i>Collection</i>	Collect a random urine. Aliquot urine into plastic urine container and freeze.
<i>Requisition #</i>	Referral Test Requisition
<i>Special Handling Instructions</i>	Common testing for Organic Acidurias Disease.
<i>Shipping</i>	Send frozen. Referred to Saskatoon District Health, Saskatoon.
<i>Reference Values</i>	Detailed on Report
<i>Turnaround Time</i>	2 weeks



Referrals

Section	Referral
Test	Penicillin Allergen Test (R) (Penicillin G/Penicillin V)
Specimen	2 mL serum
Collection	Use serum separator vacutainer (SST)
Requisition #	Referral Test Requisition
Special Handling Instructions	
Shipping	Referred to Saskatoon District Health, Saskatoon.
Reference Values	Includes specific Penicillin G and Penicillin V assays. Detailed on report.
Turnaround Time	2 weeks

Section	Referral
Test	P-Neutrophil Cytoplasmic Antibody (R) (P-ANCA)
Specimen	2 mL serum
Collection	Use serum separator vacutainer (SST). Centrifuge. Aliquot required amount of serum into 12 x 75 mm plastic tube as soon as possible.
Requisition #	Referral Test Requisition
Special Handling Instructions	The testing is now being done as a screen, and when the screen is positive, then the separate "P" and "C" ANCA testing will be performed. Otherwise, only the ANCA screen will be done.
Shipping	Referred to Saskatoon.
Reference Values	Detailed on Report
Turnaround Time	1 week



Referrals

Section	Referral
Test	Porphyrins Screen (Feces) (R)
Specimen	50 g random feces
Collection	Collect feces specimen. Place feces into plastic container, seal the container, protect from light and freeze.
Requisition #	Referral Test Requisition
Special Handling Instructions	Specimen must be sent in a sealed container. Protect from the light (use dark container or wrap in tinfoil).
Shipping	Send frozen. Referred to Hospitals In Common, Toronto.
Reference Values	Quantitative analysis may only be done if a preliminary Porphyrin screen is positive. Detailed on Report
Turnaround Time	3 weeks

Section	Referral
Test	Porphyrins, Plasma (R)
Specimen	4 mL plasma (Heparin, EDTA)
Collection	Collect blood in trace element tube. Centrifuge and separate plasma from the cells into plastic vial. Protect from light (wrap in aluminium foil). Freeze plasma.
Requisition #	Referral Test Requisition
Special Handling Instructions	Protect from light. Wrap in aluminium foil. Store frozen.
Shipping	Send frozen. Referred to Hospitals In Common, Toronto.
Reference Values	This assay also includes Uroporphyrin I, Uroporphyrin III, Heptacarboxylic Acid, Hexacarboxylic Acid, Coproporphyrin I, and Coproporphyrin III. Detailed on report
Turnaround Time	3 weeks



Saskatchewan
Health

Saskatchewan

Saskatchewan Disease
Control Laboratory
3211 Albert Street
Regina, Canada
S4S 5W6

April 30, 2007

Dear Clients:

Saskatchewan Disease Control Laboratory (SDCL) Protocol for Submission of Specimens for Occupational Exposures to Blood-borne Pathogens:

Regional laboratories should ensure that specimens related to **occupational exposures to blood-borne pathogens** are transported to SDCL *as promptly as possible* to ensure that any specimens that require STAT processing can be handled expeditiously. Please refer to the following guidelines when sending specimens for STAT processing of needle stick requests.

After notification to SDCL, prior to receipt of specimen, test requests will be considered for STAT processing for the following:

Source Patient Sample

- If exposure is from high-risk source (known positive for HIV or Hepatitis B, IDU [intravenous drug user], Sex trade worker, MSM [men who have sex with men]).
- If the healthcare worker has already started HIV post-exposure prophylaxis (PEP).

Healthcare Worker Sample

- If the health care worker does not know their HBV immune status (whether or not they had ever received HBV vaccine or have serology documenting immunity). Please check medical records before making test request if possible.

Tests to request:

- Source patient - HIV, HBsAg, HCV and HBc Total
- Healthcare worker - HIV, HBsAg, HCV and anti-HBsAg

Requests that do not meet the STAT criteria above will be handled ASAP the next SDCL working day.

All STAT or ASAP needle stick requests must be preceded with notification to SDCL by **phone** at (306) 787-3131 or (306) 787-2964, or after hours, (306) 537-0639, **before samples arrive** at the Saskatchewan Disease Control Laboratory. A copy of the requisition should then be faxed, (306) 787-9122, to the Specimen Management Centre.

General Information:

- The requisition must have the **contact phone number and person** for receipt of results clearly indicated on the requisition.
- Please put the **ordering Physician's name and "complete" return address** on the test request requisition(s). Specimens without this information will not be processed.
- Send the STAT specimen in a package that is clearly identified as **'STAT'**. When using STC Bus, mark the box **"station to station"** on the bus manifest.

Thank you.

Jim Putz, Quality Co-ordinator
Saskatchewan Disease Control Laboratory
Regina, SK S4S 2E4
Phone: 306-787-9404 Fax: 306-787-1525